Industrial Revolution 4.0 can help boost construction industry

NSTP, 10/10/2020 (Saturday) m/s: 13

WHILE the coronavirus has caused a setback to the world's economy as nations are forced into lockdown, it is different for the construction industry where workers are expected to work on-site either to perform or to oversee ongoing projects.

The Malaysian construction industry has suffered a decline of 60 per cent during the 2016 to 2018 period, a figure which has been projected to be more severe with the current restrictions on all sectors due to the ongoing pandemic, as only the registered Grade 1 to 4 contractors under the Malaysian Construction Industry Development Board (CIDB) are authorised to resume works on-site, whereas contractors from Grade 5 to 7 are excluded from this exemption.

It was further envisioned that the market size of the global construction industry is anticipated to decline this year before recovering next year and attaining a market size of US$11,496.7 billion. This growth is projected due to the expected economic recovery leading to increasing awareness about antibacterial construction materials and 21st-century technologies (IR 4.0).

The digitisation of appropriate data can provide a quick response for resolving the problem and cooperative business environments in project design schemes, building, and operation, deployment of resources and improve safety and quality. This transformation will not only affect how physical structures are designed, built and sustained, but likewise how they are being used.

It was further revealed in recent research that the construction industry has been unsuccessful in keeping pace with improvements in productivity as opined within the manufacturing sector for the last two decades.

Although both construction and manufacturing industries have their place in two divergent groups, both are still reliant on each other. The possibility of digitalisation in the construction industry is assessed across various departments, divisions and functions which can also be categorised into four groups: automation, digital data, connectivity and digital access.

Digital data includes the electronic processing and gathering of data to attain new and current insights into each relationship within the value chain and thereafter place these current assessments to better use.

Therefore, advocating' for the quick use of artificial intelligence, Internet of Things, digital learning platforms, augmented and virtual reality, drones, 3D printers, self-healing concrete, advanced GPS technology, wearable technology, robotics, prefabrication, modularisation, and eco-friendliness, Building Information Modelling (BIM), construction software and data ecosystem, cloud, and mobile technology will improve construction industry output.

Although the construction industry is considered one of the major drivers of every nation's economy, its efficacy can be further boosted through the involvement of IR 4.0, like in the manufacturing industry. The development and utilisation of other technologies aiding the success to date are pressing towards IR 4.0. There is clear-cut evidence that the construction industry is doing more than its bit, generating and advocating the use of those digital technologies.

Over the past three years, the deployment of digital technologies in design and construction has started to grow and becoming a norm for various industries. BIM has led the way in the digitalisation of the construction industry, leading to a significant difference between how building designs are evaluated (to show conformity in the virtual world) and how buildings perform in the physical realm.

Stakeholders in the government, academia and the industry will all have a big role to play in meeting that challenge especially in preparing the new generation for future jobs within the construction industry in a post-Covid-19 world.

DR ADEKUNLE QUDUS ADELEKE
Senior Lecturer, Faculty of Industrial Management
Universiti Malaysia Pahang